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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,357	09/29/2000	Alex P. Yung	NCRC-0028-US (9433)	1117

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EXAMINER
ALI, SYED J

ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/675,357	YUNG ET AL.
Office Action Summary	Examiner	Art Unit	
	Syed J. Ali	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>26 May 2005</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>2-4,6-8,11-18,21,22,24,25,28-32,37-39 and 42-61</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>2-4,6-8,11-18,21,22,24,25,28-32,37-39,42,49,53-56 and 59</u> is/are rejected.

7) ☒ Claim(s) <u>43-48,50-52,57,58,60 and 61</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection.   Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on May 26, 2005 has been entered. Claims 2-4, 6-

8, 11-18, 21-22, 24-25, 28-32, 37-39, and 42-61 are presented for examination.

2.   The text of those sections of Title 35, U.S. code not included in this office action can be

found in a prior office action.

Claim Rejections - 35 USC § 103

3.   **Claims 2-4, 6-8, 11-18, 21-22, 24-25, 28-32, 37-39, 42, 49, 53-56, and 59 are rejected**

under 35 U.S.C. 103(a) as being unpatentable over Swami et al. (USPN 5,845,113)

(hereinafter Swami) in view of Blair (USPN 5,369,764).

4.   As per claim 7, Swami teaches the invention as claimed, including a method of

performing parallel data operations upon data in a database, comprising:

        receiving a data transaction request in a client system (col. 6 lines 42-50);

        executing a plurality of multi-phase parallel tasks in response to the request to perform

the data operations upon the data in the database (col. 6 line 51 - col. 7 line 33), wherein

executing the multi-phase parallel tasks comprises executing each of the parallel tasks in plural

phases (col. 7 lines 34-49); and

each parallel task providing an indication of whether the task is to be re-invoked in the next phase (col. 4 lines 48-51; col. 8 lines 17-55).

5.   Blair teaches the invention as claimed, including tasks providing a code to indicate the need to be re-invoked (col. 5 line 53 - col. 6 line 11).

6.   It would have been obvious to one of ordinary skill in the art to combine Swami and Blair since the corruption or loss of data, particularly within network environments is a well-known concern in protecting data integrity. As Swami is a distributed database system that utilizes such a network model (col. 6 lines 14-16), it would have been obvious to one of ordinary skill in the art to take precautions against such a loss of data. Blair implements a common technique of protecting data, i.e. checkpoint restarting of programs (Abstract). Blair teaches creating rollback points at various points of a programs execution such that a "snapshot" is available at particular points in time (col. 5 line 53 - col. 6 line 11). If a program or task abnormally terminates or otherwise fails, Blair teaches restarting the program by issuing a code to indicate such (col. 5 line 53 - col. 6 line 11).

7.   As per claim 2, Swami teaches the invention as claimed, including the method of claim 7, wherein receiving a data transaction request comprises receiving a request for loading data into the database (col. 6 lines 42-50).

8.   As per claim 3, Swami teaches the invention as claimed, including the method of claim 7, wherein receiving a data transaction request comprises receiving a request to perform a data transformation operation upon the data in the database (col. 6 line 42 - col. 7 line 33).

9.   As per claim 4, Swami teaches the invention as claimed, including the method of claim 3,

wherein receiving a request to perform the data transformation operation comprises receiving a

request to perform one of a data selection operation, a data validation operation, a data cleansing

operation, and a data query operation (col. 6 line 42 - col. 7 line 33).

10.   As per claim 8, Swami teaches the invention as claimed, including the method of claim 7,

wherein providing a task coordinator directs the process of re-invoking tasks (col. 5 line 66 - col.

6 line 2).

11.   Blair teaches the invention as claimed, including tasks providing the code indicating the

need to be re-invoked (col. 5 line 53 - col. 6 line 11).

12.   As per claim 56, Blair teaches the invention as claimed, including the method of claim 8,

further comprising:

        re-invoking, by the task coordinator, a first one of the parallel tasks in the next phase in

response to the first parallel task providing a first code indicating the first parallel task is to be re-

invoked (col. 5 line 53 - col. 6 line 11).

13.   As per claim 6, Swami teaches the invention as claimed, including the method of claim

56, comprising executing the first parallel task in a first number of phases and the second parallel

task in a second, different number of phases (col. 7 line 50 - col. 8 line 4).

14.   As per claim 53, Swami teaches the invention as claimed, including the method of claim

7, wherein executing the plurality of multi-phase parallel tasks includes executing a plurality of

checkpoint tasks in parallel, each checkpoint task having multiple phases, and each checkpoint

task to write data to storage to provide an indication of a current execution point (col. 7 lines 34-

49).

15.   As per claim 54, Swami teaches the invention as claimed, including the method of claim

7, wherein executing the plurality of multi-phase parallel tasks includes executing the plurality of

multi-phase tasks in parallel (col. 7 lines 34-49).

16.   As per claim 11, Swami teaches the invention as claimed, including a method of

performing parallel data operations upon data in a database, comprising:

        receiving a data transaction request in a client system (col. 6 lines 42-50);

        executing a plurality of multi-phase parallel tasks in response to the request to perform

the data operations upon the data in the database (col. 6 line 51 - col. 7 line 33);

        analyzing the transaction request (col. 6 line 51 - col. 7 line 33);

        creating a task plan in response to the transaction request (col. 6 line 51 - col. 7 line 33);

        implementing the task plan in a multi-phase organization, wherein the plurality of multi-

phase parallel tasks are executed to implement the task plan (col. 6 line 51 - col. 7 line 33);

        executing a plurality of tasks in parallel to implement the task plan (col. 6 line 51 - col. 7

line 33);

determining, by a task coordinator (col. 5 line 66 - col. 6 line 2), whether an additional phase is required to execute the tasks (col. 4 lines 48-51; col. 8 lines 17-55); and

scheduling, by the task coordinator (col. 5 line 66 - col. 6 line 2), an additional phase in response to the determination that an additional phase is required (col. 4 lines 48-51; col. 8 lines 17-55).

17.   Blair teaches the invention as claimed, including tasks providing a code to indicate the need to be re-invoked (col. 5 line 53 - col. 6 line 11).

18.   As per claim 12, Swami teaches the invention as claimed, including the method of claim 11, wherein implementing the task plan comprises creating a job script (col. 6 line 51 - col. 7 line 33).

19.   As per claim 13, Swami teaches the invention as claimed, including the method of claim 11, wherein implementing the task plan comprises:

translating the task plan (col. 8 line 56 - col. 9 line 2; col. 9 lines 55-67; col. 10 lines 13-34);

selecting a plurality of software components corresponding to the parallel tasks to implement the translated task plan (col. 8 line 56 - col. 9 line 2; col. 9 lines 55-67; col. 10 lines 13-34);

assigning a plurality of processes corresponding to the software components (col. 6 line 51 - col. 7 line 33); and

creating a communications channel to allow for communications between the processes (col. 6 line 51 - col. 7 line 33).

20.   As per claim 14, Swami teaches the invention as claimed, including the method of claim 13, wherein selecting the plurality of software components to implement the translated task plan comprises selecting the plurality of software components to perform at least one of a data extraction operation, a data transformation operation, and a data loading operation (col. 6 lines 42-50).

21.   As per claim 59, Blair teaches the invention as claimed, including the method of claim 11, further comprising:

re-invoking, by the task coordinator, a first one of the parallel tasks in the additional phase in response to the first parallel task providing a first code indicating the first parallel task is to be re-invoked (col. 5 line 53 - col. 6 line 11).

22.   As per claim 15, Swami teaches the invention as claimed, including an apparatus, comprising:

a user interface (col. 6 lines 42-50);

a processor coupled with the user interface, wherein the processor receives a data transaction request from the user interface (col. 6 lines 42-50); and

a controller coupled with the processor, wherein the controller performs a plurality of tasks in parallel based upon instructions received from the processor, each tasks performed in a plurality of phases (col. 6 line 51 - col. 7 line 49),

each task providing an indication of whether the task is to be re-invoked in a next phase (col. 4 lines 48-51; col. 8 lines 17-55).

23.   Blair teaches the invention as claimed, including tasks providing a code to indicate the need to be re-invoked (col. 5 line 53 - col. 6 line 11).

24.   As per claim 16, Swami teaches the invention as claimed, including the apparatus of claim 15, wherein the processor generates a task plan in response to the data transaction request (col. 6 line 51 - col. 7 line 33).

25.   As per claim 17, Swami teaches the invention as claimed, including the apparatus of claim 16, wherein the controller comprises a task coordinator to execute the task plan (col. 5 line 66 - col. 6 line 2).

26.   As per claim 18, Swami teaches the invention as claimed, including the apparatus of claim 16, wherein the controller further comprises a plurality of components to implement the task plan in parallel (col. 6 line 51 - col. 7 line 33).

27.   As per claim 21, Swami teaches the invention as claimed, including the apparatus of claim 15, wherein the controller performs a number of tasks in parallel based upon instructions

received from the processor, each task performed in a plurality of phases further comprises the

controller performing the tasks in a sequence of multiple process steps (col. 6 lines 25-31; col. 7

lines 24-49).

28.   As per claim 55, Swami teaches the invention as claimed, including the apparatus of

claim 15, wherein the plurality of tasks include a plurality of checkpoint tasks that are executed

in parallel, each checkpoint task having multiple phases, and each checkpoint task to write data

to storage to provide an indication of a current execution point (col. 7 lines 34-49).

29.   As per claim 22, Swami teaches the invention as claimed, including a system,

comprising:

  a database system (col. 5 line 52 - col. 6 line 13);

  a network (col. 6 lines 14-16); and

  a client system separate from the database system and coupled to the database system

(col. 5 lines 52-60; col. 6 lines 14-16; col. 6 lines 42-50).

30.   Blair teaches the invention as claimed, including the client system establishing plural

sessions with the database system (col. 5 line 53 - col. 6 line 11) to implement a plurality of data

operations upon the database system in parallel (col. 5 line 53 - col. 6 line 11).

31.   It is noted that Blair does not specifically address the use of a network. However, the

model used by Blair is easily implemented in a networked environment, as the general

architecture is presented essentially as a distributed system. Additionally, executing a plurality

of data operations upon the database system in parallel is also taught by Swami (col. 6 line 51 -

col. 7 line 33).

32.   As per claim 24, Swami teaches the invention as claimed, including the system of claim

22, wherein the database is a parallel database system (col. 5 line 52 - col. 6 line 13).

33.   As per claim 25, Swami teaches the invention as claimed, including the system of claim

22, wherein the client system comprises:

      a processor to receive a data transaction request (col. 5 line 52 - col. 6 line 13);

      a plurality of operators to perform parallel data operations in response to the data

transaction request (col. 5 line 52 - col. 6 line 13);

      an operator interface coupled to the operators, wherein the operator interface allows

communications between the operators (col. 5 line 52 - col. 6 line 16).

34.   As per claim 49, Swami teaches the invention as claimed, including the system of claim

22, wherein the client system is adapted to execute plural tasks in parallel, each of the plural

tasks executable in plural phases (col. 7 lines 34-49).

35.   As per claim 28, Swami teaches the invention as claimed, including an article comprising

at least one storage medium containing instructions that when executed cause a client system to:

      receive a data transaction request (col. 6 lines 42-50);

execute a plurality of parallel tasks in the plural sessions to perform data operations upon the data in the database system over a network connection (col. 6 line 51 - col. 7 line 33), wherein the client system is separate from the database system (col. 6 lines 14-16; col. 6 lines 42-50).

36.   Blair teaches the invention as claimed, including establishing plural sessions with a database system in response to the request (col. 5 line 53 - col. 6 line 11).

37.   As per claim 29, Swami teaches the invention as claimed, including the article of claim 28, wherein the instructions when executed cause the client system to execute each of the parallel tasks in plural phases (col. 7 lines 34-49).

38.   As per claim 30, Swami teaches the invention as claimed, including the article of claim 29, wherein the instruction when executed cause the client system to execute a first parallel task in a first number of phases and a second parallel task in a second, different number of phases (col. 7 line 50 - col. 8 line 4).

39.   As per claim 31, Swami teaches the invention as claimed, including the article of claim 29, wherein the instructions when executed cause each parallel task providing an indication of whether the task is to be re-invoked in the next phase (col. 4 lines 48-51; col. 8 lines 17-55).

40.   Blair teaches the invention as claimed, including tasks providing a code to indicate the need to be re-invoked (col. 5 line 53 - col. 6 line 11).

As per claim 32, Blair teaches the invention as claimed, including the article of claim 31,

wherein the instructions when executed cause a task coordinator to direct the process of re-

invoking tasks (col. 5 line 66 - col. 6 line 2).

41.   Blair teaches the invention as claimed, including tasks providing the code indicating the

need to be re-invoked (col. 5 line 53 - col. 6 line 11).

42.   As per claim 38, Swami teaches the invention as claimed, including a method of

performing parallel data operations upon data in a database, comprising:

         receiving a data transaction request (col. 6 lines 42-50); and

         executing a plurality of synchronized multi-phase parallel tasks in response to the request

to perform the data operations upon the data in the database (col. 6 line 51 - col. 7 line 33),

         wherein executing the multi-phase parallel tasks comprises executing each of the parallel

tasks in phases (col. 7 lines 34-49); and

         each parallel task providing an indication of whether the task is to be re-invoked in the

next phase (col. 4 lines 48-51; col. 8 lines 17-55).

43.   Blair teaches the invention as claimed, including tasks providing a code to indicate the

need to be re-invoked (col. 5 line 53 - col. 6 line 11).

44.   As per claim 37, Swami teaches the invention as claimed, including the method of claim

38, comprising executing a first parallel task in a first number of phases and a second parallel

task in a second, different number of phases (col. 7 line 50 - col. 8 line 4).

45.   As per claim 39, Swami teaches the invention as claimed, including the method of claim

7, wherein providing a task coordinator directs the process of re-invoking tasks (col. 5 line 66 -

col. 6 line 2).

46.   Blair teaches the invention as claimed, including tasks providing the code indicating the

need to be re-invoked (col. 5 line 53 - col. 6 line 11).

47.   As per claim 42, Swami teaches the invention as claimed, including the method of claim

39, wherein the code synchronizes the operation of one or more components (col. 7 lines 34-49).

Allowable Subject Matter

48.   **Claims 43-48, 50-52, 57-58, and 60-61 are objected to as being dependent upon a**

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Conclusion

49.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Syed J Ali whose telephone number is (571) 272-3769. The

examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai T An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Syed Ali
July 29, 2005

MAJID BANANKHAH
PRIMARY EXAMINER